UFlex® High-efficiency anti-mold wall system

construction scheme

UQESH Advanced Materials Technology (Shanghai) Co., Ltd.

March 1, 2022

Foreword

UFlex® high-efficiency anti-mold wall system has delicate and smooth effect, strong adhesion, firm combination with base course, high paint film hardness, easy cleaning, excellent corrosion resistance and chemical resistance. The surface of the coating is compact, which reduces the adhesion of mold spores on the surface of the coating, thus cutting off the propagation chain of mold, and contains special waterproof and mildew-proof double-effect protective particles, which have a double-layer function synergistic effect, comprehensively inhibits the growth of mold, and upgrades the production area prone to mold growth to a clean and mildew-free environment. It can bear warm water cleaning at 40 ~ 60℃ for a long time, and can bear steam at 120℃ occasionally, which is beneficial to cleaning oil stains attached to the coating surface during daily maintenance. Can be used for indoor newly-built and renovated schools, kindergartens and offices., hospitals and other public places, especially suitable for the special environment of beverage, food, pharmaceutical and other industries with strict requirements of dustproof, mildew-proof, anti-corrosion and scrub resistance, with long service life.

In order to make the constructors and customers familiar with the construction of UFlex® high-efficiency anti-mold wall system, standardize the quality control of the high-efficiency mildew-proof wall system, and achieve leading technology, economy and rationality, environmental protection, safety and applicability, and ensure quality, according to the product promotion requirements of the Technology Development Center of UQESH Advanced Materials Technology (Shanghai) Co., Ltd., the Technology Development Center is responsible for compiling the construction plan as the preliminary technical guidance document of UQESH Advanced Materials Technology (Shanghai) Co., Ltd.

At the same time, the actual combat experience accumulated by the project managers and constructors on site is more valuable. It is expected that all parties will strengthen the construction experience summary and technical exchange feedback, so that the construction scheme of UFlex® high-efficiency anti-mold wall system will be revised and improved continuously.

This construction scheme is the first promotion and implementation of UQESH Advanced Materials Technology (Shanghai) Co., Ltd., and UQESH Advanced Materials Technology (Shanghai) Co., Ltd. reserves the right to modify and improve any information in this document at any time without any prior notice and without any responsibility.

The main contents of this document are as follows: 1. Compilation basis; 2. Terminology; 3. Basic regulations; 4. Technical requirements; 5. Construction process and technology; 6. Construction precautions; 7. Acceptance criteria.

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1. Compilation basis

1.1 GB/T 50210-2018 Code for Quality Acceptance of Building Decoration Engineering (Including provisions)

1.2 GB/T 50204-2015 Code for Acceptance of Construction Quality of Concrete Structure Engineering

1.3 GB 50300-2016 Unified Standard for Construction Quality Acceptance of Building Engineering

1.4 JGJ/T 29-2015; J250-2011 Code for Construction and Acceptance of Building Finishing Engineering

1.5 Construction Technology Standard for Building Decoration Engineering (Building Construction Manual)

1.6 GB/T 9756-2018 Synthetic resin emulsion interior wall coating

1.7 GB 18582-2020 Limit of Harmful Substances in Wall Coatings for Building

2.Terminology

2.1 Mouldproof wall sealing putty

Made of high-quality natural powder, special compound additives and water-resistant materials. The product has high bonding strength, is firmly combined with the base layer, and contains long-term and stable mildew-proof factors, which can prevent mold growth from the substrate level and effectively prolong the service life of the top coating.

2.2 Mildew-proof and alkali-resistant sealing primer

It consists of polymer copolymer emulsion, additives and water. It has excellent permeability to the base layer, strong adhesion, water resistance and alkali resistance, contains long-term and stable mildew-proof factors, can prevent mold growth from the base material level, and is used in conjunction with UFlex? high-efficiency mildew-proof wall system series products, with excellent interlayer adhesion and protection function.

2.3 Anti-mildew wall reinforcement putty

It consists of polymer cross-linking, high-quality natural powder, special composite additives and water-resistant materials. The product has fine and smooth effect, strong adhesion, high hardness and strength, and excellent water and alkali resistance. The putty layer contains a long-lasting and stable mildew-proof factor, which can prevent mold growth from the substrate level and effectively prolong the service life of the top coating.

2.4 Waterborne mildew-proof top coating

It is refined by using high-quality polymer as cross-linking body, adding special composite additives and heat-resistant materials, including METOP Ober 609 water-based mildew-proof clean surface coating and METOP Ober 701 water-based mildew-proof matte surface coating. After painting, the product has fine and smooth effect, strong adhesion, firm combination with the base layer, high film hardness, warm water resistance, excellent corrosion resistance and chemical resistance. The surface of the coating film is dense and contains special waterproof and mildew-proof protective particles, which completely inhibits the growth of mold and creates a clean and mildew-free environment.

2.5 VOC

VOC is the abbreviation of volatile organic compounds. American ASTM D3960-98 defines VOC as any organic compound that can participate in atmospheric photochemical reactions. United States Federal Environmental Protection Agency.

Definition of EPA: Volatile organic compounds are any carbon compounds that participate in atmospheric photochemical reactions except CO, CO_2, H_2CO_3, metal carbides, metal carbonates and ammonium carbonates. The World Health Organization (WHO, 1989) has a good understanding of total volatility.

TVOC is defined as a general term for volatile organic compounds whose melting point is lower than room temperature and boiling point is between 50 ~ 260℃.

3. Basic regulations

3.1 The raw materials and formula design of UFlex® high-efficiency anti-mold wall system shall comply with the "GB/T 9756-2018 Synthetic resin emulsion Liquid interior wall coating" and "GB 18582-2020 Limit of Harmful Substances in Wall Coatings for Construction".

3.2 The construction unit undertaking UFlex® high-efficiency anti-mold wall system should have corresponding construction experience and perfect engineering quality management system.

3.3 Any materials other than the formula are not allowed to be added to the construction site. If you have special needs, please consult the Technology Development Center of UQESH Advanced Material Technology (Shanghai) Co., Ltd.

3.4 After the overall construction is completed, it can be put into use only after it is maintained in a dry, ventilated and dust-free condition until the surface layer works hard.

4. Technical Requirements

4.1 UFlex® high-efficiency anti-mold wall system harmful substances index

The harmful substances of products used in UFlex® high-efficiency mildew-proof wall system shall meet the requirements in the following table:

Serial number	Test item	Technical indicators	Test method specification
1	VOC content g/L	<40g/L	GB/T 23986-2009 GB 18582-2020
2	Formaldehyde content mg/kg	Not detected	GB/T 23993-2009
3	Total content of benzene series mg/kg	Not detected	GB/T 23990-2009
4	Total content of alkylphenol polyoxyethylene ether [limited to octylphenol polyoxyethylene ether (OPnEO) and nonylphenol polyoxyethylene ether (NPnEO), n = 2 ~ 16)] mg/kg	Not detected	GB/T 31414-2015
5	Soluble metal content (cadmium Cd, chromium Cr, mercury Hg) mg/kg	Not detected	GB/T 23991-2009
6	Total lead (Pb) content mg/kg	Not detected	GB/T 30647-2014

4.2 Main performance requirements of UFlex® high-efficiency mildew-proof wall system

The Uflex® high-efficiency mildew-proof wall system includes the performance indexes of Uflex® series products, such as PROTOR CL30 bactericidal treatment agent, PROTOR INTERA compound waterborne sealing interface agent, METOP Kitt01 mildew-proof wall sealing putty, METOP prim 109 mildew-proof alkali-resistant sealing primer, METOP Kitt719 mildew-proof wall reinforced putty and waterborne mildew-proof top coating.

4.2.1 Performance indicators of UFlex® PROTOR CL30 bactericidal treatment agent

Supporting system	Serial numbe	Test item	Technical indicators	Test method specification
Sterilization and mildew removal	1	Escherichia coli	kill rate 99.999%	Technical Standard For disinfection, 2002 edition
	2	Staphylococcus aureus	kill rate 99.999%	

4.2.2 Performance indicators of UFlex® PROTOR INTERA composite waterborne sealing interface agent

Supporting system	Serial numbe	Test item	Technical indicators	Test method specification
Sterilization and mildew removal	1	Staphylococcus aureus	≧8	JG/T 468-2015
	2	Staphylococcus aureus	Level 0	GB/T 1741-2007

4.2.3 Performance indicators of UFlex® METOP Kitt 01 mildew-proof wall sealing putty

Supporting system	Serial numbe	Test item		Technical indicators	Test method specification
Wall sealing putty	1	Operating time		2 hours (at 25°C)	
	2	Constructability		Scraping barrier-free	JG/T 298-2010
	3	Drying time (surface drying, 25℃)	Single-pass construction thickness < 2mm	⩽2h	GB 1728-79, Method B 25℃
			Single-pass construction thickness ≧ 2mm	⩽5h	GB 1728-79, Method B 25℃
	4	Polishability		Hand sandable	JG/T 298-2010
	5	Water resistance		48 hours without foaming, cracking and obvious powder loss	GB/T 1733-1993
	6	Bonding strength	Standard state	>0.50MPa	JG/T 24-2000 JG/T 298-2010
			After immersion	>0.30MPa	
	7	Mildew-proof grade		Level 0	GB/T 1741-2007

4.2.4 Performance indicators of UFlex® METOP Prim 109 anti-mold and alkali-resistant sealing primer

Supporting system	Serial number	Test item	Technical indicators	Test method specification
Alkali-resistant sealing	1	Construction property	Scraping barrier-free	JG/T 298-2010
	2	Resistance to alkali	No abnormality in 24 hours.	GB/T 9265-2009
	3	Anti-alkaline	No abnormality in 48 hours.	GB/T 9756-2018
	4	Mildew-proof grade	Level 0	GB/T 1741-2007

4.2.5 Performance indicators of UFlex® METOP Kitt 719 anti-mildew wall reinforcement putty

Supporting system	Serial number	Test item		Technical indicators	Test method specification
	1	Operational time		40 minutes (at 25°C)	
	2	Construction property		Scraping barrier-free	JG/T 298-2010
	3	Drying time (Surface dryness, 25℃)	Single-pass construction thickness < 2mm	⩽2h	GB 1728-79, Method B 25℃
			Single-pass construction thickness ⩾ 2mm	⩽5h	GB 1728-79, Method B 25℃
	4	Polishing property		Hand grindable	JG/T 298-2010
	5	Water resistance (48 hours)		No foaming, cracking and obvious powder dropping.	GB/T 1733-1993
	6	Bond strength	Standard state	>1.5MPa	JG/T 24-2000 JG/T 298-2010
			After immersion	>1.0MPa	
	7	Mildew-proof grade		Level 0	GB/T 1741-2007

4.2.6 Performance indicators of UFlex® Metop Ober 609 waterborne mildew-proof clean top coating

Supporting system	Serial number	Test item	Technical indicators	Test method specification
Waterborne mildew-proof top coating	1	Operational time	40 minutes (at 25°C)	
	2	Completely cured	7 days (at 25°C)	
	3	Resistance to alkali	No abnormality in 24 hours	GB/T 9265-2009
	4	Scrubbing resistance	6,000 times without revealing the bottom	GB/T 9266-2009
	5	Easy to clean (vegetable oil, soy sauce, oil consumption, Chili sauce, tomato sauce, strong tea, coffee, whiteboard pen and other pollutants)	Wet towel can be wiped clean, the coating is intact, and there is no loss of light and peeling.	Customize
	6	Resistant to 80°C hot water	240 hours No bubbling, peeling and yellowing	Customize
	7	Mildew-proof grade	Level 0	GB/T 1741-2007

4.2.7 Performanceindicators of UFlex METOP Ober 701 waterborne anti-mold matte top coating

Supporting system	serial number	Test item	Technical indicators	Test method specification
Waterborne mildew-proof top coating	1	Completely cured	40 minutes (at 25°C)	
	2	Completely cured	7 days (at 25°C)	
	3	Resistance to alkali	No abnormality in 24 hours.	GB/T 9265-2009
	4	Scrubbing resistance	6,000 times without revealing the bottom	GB/T 9266-2009
	5	Contrast ratio	≥0.95	GB/T 23981-2009
	6	Easy to clean (vegetable oil, soy sauce, oil consumption, Chili sauce, tomato sauce, strong tea, coffee, whiteboard pen and other pollutants)	Wet towel can be wiped clean, the coating is intact, and there is no loss of light and peeling.	Customize
	7	Resistant to 80°C hot water	240 hours No bubbling, peeling and yellowing	Customize
	8	Mildew-proof grade	Level 0	GB/T 1741-2007

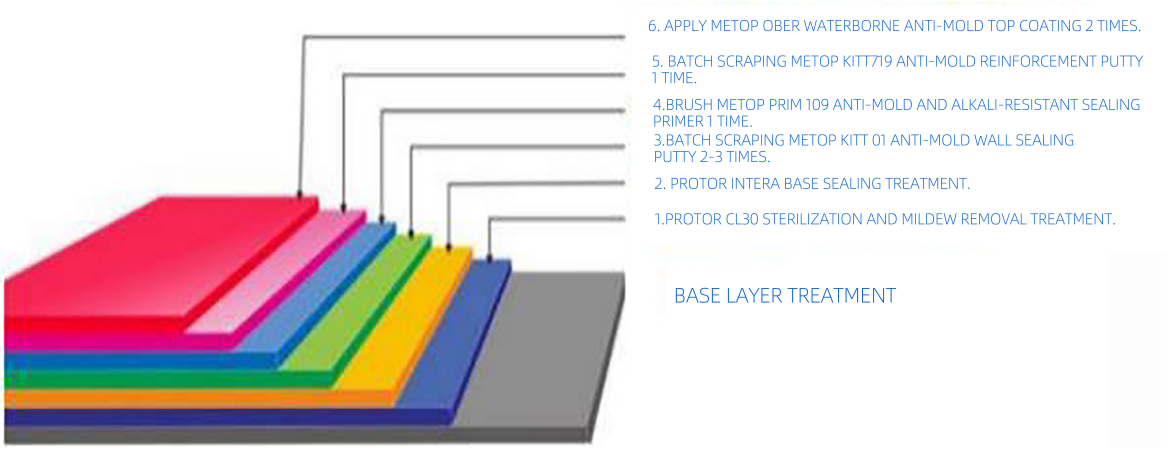
5. Construction process and technology

5.1 Construction process of 1 UFlex® high-efficiency anti-mold wall system

Cement mortar hanging net plastering ⇨ Installation of water pipes, circuits, door frames, window frame,guardrails ⇨ Mortar sealing ⇨ Basic inspection, treatment and repairl ⇨ Sterilization and mildew removal treatment ⇨ Base layer 7sealing ⇨ First full coat of sealing putty ⇨ Second full coat of sealing putty ⇨ Polishing, maintenance ⇨ Painting mildew-proof and alkali-resistant sealing primer ⇨ Full scraping reinforcement putty ⇨ Painting waterborne mildew-proof surface ⇨ Sealing glue for water pipes, circuits, door

frames and window frames.

The construction schematic diagram of UFlex® high-efficiency anti-mold wall system is shown in the following figure:



The following table lists the process parameters of UFlex® high-efficiency anti-mold wall system:

Order number	Craft	Product name	construct number of tracks	Coating rate per pass	Dry film thickness	Repainting interval
1	Basic treatmen	--	--	--	--	--
2	Sterilization and mildew remova	PROTOR CL30 bactericidal treatment agent	1 ~ 2	0.30 ~ 0.45kg/㎡. (After being diluted by 30 times of water.)		1 hour
3	Base sealing	PROTOR INTERA composite wateborne sealing interface agent	1	0.10 ~ 0.15kg/㎡	0.03 ~ 0.04mm	2 hour

4	Closed putty	METOP Kitt01 anti-mold wall closure putty	2~3	1.0 ~ 1.5kg/㎡	2.0 ~ 3.0mm	4 hour
5	Alkali-resistant sealing	METOP Prim 109 Mildew and Alkali Sealing Primer	1	0.10 ~ 0.15kg/㎡	0.03 ~ 0.04mm	2 hour
6	Reinforcing putty	METOP Kitt719 anti-mold wall reinforcement putty	1	0.8 ~ 1.0 kg/㎡	0.5 ~ 1.0 mm	6 hour
7	Mildew-proof top coating	METOP Ober609 waterborne anti-mold clean top coating	2	0.10 ~ 0.15kg/㎡	0.06 ~ 0.08mm	6 hour
		METOP Ober701 waterborne anti-mold matte top coating	2	0.10 ~ 0.15kg/㎡	0.06 ~ 0.08mm	6 hour

5.2 Basic standard requirements and treatment requirements

5.2.1 Basic requirements of grass-roots level

(1) Flattening

The construction and acceptance of the base plastering project shall meet the advanced plastering requirements of the national industry standard GB 50210-2001 Code for Quality Acceptance of Building Decoration Engineering.

Project	Allowable deviation (mm)		Test method
	Ordinary plastering	Senior	
Facade verticality	≤4	≤2mm	
Surface flatness	≤4	≤2mm	
Founder of Yin and Yang angle	≤4	≤2mm	Check with a right-angle measuring ruler
Linearity of divider (seam)	≤4	≤3mm	Pull the 5m line, if it is less than 5 Milla lines, check it with a steel ruler.check

（2）Clean

The cleaning of the surface of the base is conducive to the adhesion of paint. If dust, sundries, grease, rust and cement white seepage are attached to the surface of the base, it should be thoroughly removed, and then the necessary base treatment should be carried out.

（3）Dry

In general, the newly made concrete or cement mortar base needs to be cured for more than 4 weeks. The moisture content of the base course that can be painted is less than 10%, and the pH is less than 10. If the alkalinity is too heavy, the method of neutralization with oxalic acid aqueous solution can be used to test whether the base reaches the standard with PH test paper.

（4）Firmness

In order to provide sufficient adhesion foundation for the coating, the surface of the base layer shall be free from cracking, dusting, sanding, hollowing, peeling, lime bursting point and old coating with poor adhesion.

（5）Consistent roughness

Damages, caves, cracks, hollowing, shell separation and other conditions on the surface of the base should be repaired and patched up in advance, and the alkalinity and moisture content of the mortar at the repaired parts should meet the requirements. Roughness should be the same as other parts, and there should be no obvious repair marks.

5.2.2 New wall requirements

(1) The newly plastered wall is dry, with water content < 10% and pH < 10;

(2) The base surface shall be smooth, firm and clean, free from hollowing, oil

pollution, exposed steel bars, iron wires, sawdust, loose objects and other pollutants, and the angle of yin and yang shall be straight;

(3) If it is a demoulding smallpox that has not been plastered, it should be carefully checked. If it fails to meet the standard requirements, it must be repaired first.

5.2.3 Old base surface requirements

(1) For the old wall with poor adhesion, looseness or moldy peeling due to damp, it must be thoroughly removed until the base surface is hard and firm, and then sterilized and mildewed with PROTOR CL30 sterilization and mildew-proof treatment agent, and then the bottom layer is hung and plastered again;

(2) The re-plastered wall surface shall be smooth, free from hollowing, oil pollution, firm and firm surface, free from loose objects and other pollutants, and the plastered surface shall be dry, with pH < 10 and moisture content < 10%;

(3) If the old wall coating layer has strong adhesion, and the base layer is firm, firm and flat, free from hollowing and loose pulverization, METOP Kitt719 wall reinforcement putty can be used to repair and flatten the broken parts and cracks, and then a batch of METOP Kitt719 wall reinforcement putty can be scraped, and finally the UFlex® high-efficiency mildew-proof wall system can be painted according to the normal

process requirements.

Powdered old wall surface

Moisture stripping old walls

Re-plastering and swinging

Crack-proof mesh to fill holes

5.2.4 Sheet wall requirements

In interior wall decoration, there are often planks hanging ceilings or partition walls with planks, including plywood, gypsum board, Ette board, etc. Coating UFlex® high-efficiency anti-mold wall system on this kind of foundation surface must be treated before construction.

(1) First, the board shall be sealed with a mold-proof and alkali-resistant sealing primer. If the plywood base is used, an oily primer will be used, otherwise it will be prone to yellowing after coating.

(2) For crack prevention treatment of plate joints, it is usually to repair the joints with caulking agent first, and then stick the crack prevention grid cloth with white latex;

(3) Paint anti-rust paint on nail holes for anti-rust treatment.

5.3 Construction technology of UFlex® high-efficiency anti-mold wall system

UFlex® High-efficiency anti-mold wall system

Plate hanging ceiling

Anti-corrosive treatment

Anti-crack treatment

Joint patching treatment

5.3.1 Construction tools:

Spray gun

Feather duster

Grinding rack

Mesh cloth

Masking paper

Shovel

Batch scraper

Drum

Brushes

beater

Grinder

Protective adhesive tape

PH test strips

5.3.2 The specific construction steps are as follows:

(1)Construction points of sterilization and mildew removal treatment

Serial number	Process and material name	Construction technology requirements
1	Coating PROTOR CL30 Sterilization Treatment	**Material modulation method:** ②According to the manufacturer's instruction PROTOR CL30 sterilization treatment agent: water

		(weight ratio) = 1: 30, dilute with clear water and stir evenly. **Construction method:** ①Dirty metope need to use dishcloth to clean up and tidy; The old paint layer on the old wall has been loose, powdered and peeled off, so it must be cleaned up. ②Use roller or spray gun to apply PROTOR CL30 sterilization treatment agent by full coating method. After the wall is dry, enter the next process. ③Areas with significant mold contamination need to be treated twice, the second time the product to water ratio can be increased to 1:20.

(2)Key points of construction of base sealing treatment

Serial number	Process and material name	Construction technology requirements
1	Painting PROTOR INTERA Composite Waterborne Sealing Interfacials	**The function of water-based sealing interface agent;** ①It has excellent permeability, and can fully soak the surface of the base material with high pulverization, sanding and water absorption, so that the base layer is dense and firm, and the adhesion between layers is improved; ②It is suitable for coating the base or old wall with poor adhesion, strong water absorption, pan-alkali, mildew, dirt, looseness, pulverization, watermark, peeling, hollowing and peeling. **Material modulation method:** ①Confirm the product name and batch number; ②The difficulty of trial construction shall be properly diluted with water according to the requirements of the manual, and the dilution ratio shall not exceed 20%. **Painting method:**

		③ When painting, it is necessary to confirm the product supporting information, and stir it evenly before construction; ④Use a medium-long-hair roller, and evenly roll one coat in the way of corner first and big surface later; ⑤ All parts that need to be painted shall be free of missing or less painting.

(3)Key points of wall sealing putty construction

Serial number	Process and material name	Construction technology requirements
1	Batch scraping METOP Kitt01 wall sealing putty	**Material modulation method:** ① Slowly pour that powder into weigh clean water according to the proportion of METOP Kitt01: water (weight ratio) = 100: 30-40, and stir while pouring; ②After the feeding is finished, fully and evenly stirring, and standing for 5-10 minutes for curing; ③ After curing, stir slowly and evenly to use. ④Under normal circumstances, the first pass has a large dosage, so it can be thickened, and the second pass can be thinned. **Batch scraping method:** ① After the surface at the grass-roots level is cleaned, a batch of knives will be used to scrape the edges first and then the bedding face, and the first batch of scraping will be controlled to make the surface as flat as possible and the edges vertical and square; ② After the first putty is dried, moderately polish it with 200 ~ 360 mesh sandpaper, and then scrape the second putty in batches; ③ Two putty batch scraping with auxiliary by feet, to ensure that the flatness of the base surface after batch scraping meets the requirements; ④Each batch of scraping should be compacted and should not be too thick. Parts with large difference between concave and convex walls shall be scraped and leveled in

		batches; ⑤When constructing on the base with strong water absorption, a water-based sealing interface agent should be painted first, and then the batch of putty should be blown; ⑥Estimate the material consumption in advance according to the construction area, and the mixed slurry should be used up within 2 hours (25℃); ⑦ Semi-cured materials are forbidden to continue to be used, and may not be mixed with new materials for use.
2	Surface polishing	① After leveling the surface of the material, use 360-mesh and above sandpaper to polish the scraper marks and corner burrs left on the surface, so that the surface is smooth, the angle of Yin and Yang is vertical and square, and the edges are neat; ②When polishing, polish the putty as soon as possible after it is dried, generally within 24 hours. If it is left for too long, the performance of the material will increase, and the difficulty of polishing will reduce the construction efficiency.
3	Maintain/Curing	The strength requirement of the closed putty layer is consistent with that of the base. If the strength of the putty layer is too low, there will be risks of cracking, peeling and even peeling of the high-efficiency mildew-proof wall system. The actual drying time of putty varies according to the temperature of the construction site environment, about 1-3 days. If the strength is not enough, the putty layer can be wetted by roller or water pipe to enhance the strength of the putty layer, it is generally advisable to water it in the morning and evening for 2-3 times. 

(4)Key points of alkali-resistant sealing treatment construction

Serial number	Process and material name	Construction technology requirements
1	Coating METOP prim 109 anti-mold and alkali-resistant sealing primer	**Function of anti-mildew and anti-alkali sealing primer:** ① The alkali-resistant sealing primer has good permeability, alkali resistance and mildew resistance, which increases the bonding strength of the base and seals the alkaline substances and dust of the wall together; ② improve the adhesion between the base, middle layer and surface layer, and never underestimate the role of sealing primer, which is the most basic guarantee for coating finishing. ③It is suitable for wet, alkaline, moldy, alkaline-prone and anti-alkaline walls, especially for poor adhesion, strong water absorption, dirty, loose, powdery, watermarked, peeling, hollowing and peeling base or old walls. **Material modulation method:** ③Confirm the product name and batch number; ④The difficulty of trial construction shall be properly diluted with water according to the requirements of the manual, and the dilution ratio shall not exceed 20%。 **Painting method:** ① when painting, it is necessary to confirm the product supporting information, and stir it evenly before construction; ② Use a medium-long-hair roller, and evenly roll one coat in the way of corner first and big surface later; ③all parts that need to be painted shall be free of missing or less painting.

(5)Key points of strengthening putty construction

Serial number	Process and material name	Construction technology requirements
1	Batch scraping METOP	**Material modulation method:** ①firstly, slowly pour the powder C into the weighed clean

	Kitt719 anti-mold wall reinforcement putty	water according to the ratio of C: water (weight ratio) = 5.72: 1.45-1.55, stir while pouring, fully stir evenly after feeding, and leave it for 5-10 minutes to mature. ②Mix and stir the components A and B evenly according to the package specification ratio (weight ratio) =2.50:0.36; ③ finally, the components are mixed together, stirred evenly, and blended into paste, and the consistency is subject to the convenience of construction. **Batch scraping method:** ①Closed putty layer or grass-roots surface is clean, the surface is solid, flat and smooth, and the corners are vertical and square; ② Using batch knife to batch one by batch scraping with edges first and then bedding face, so as to control the batch scraping surface to be flat and smooth, and the edges and corners are vertical and square; ③ According to the construction area in advance to estimate the material consumption, mixed slurry should be within 40 minutes (25℃) used up; ④ Semi-cured materials are strictly prohibited from continuing to be used, and may not be mixed with new materials for use.
2	Surface grinding and curing treatment	① After leveling the surface of the material, use 360# and above sandpaper to polish the scraper marks and corner burrs left on the surface, so that the surface is smooth, the angle of Yin and Yang is vertical and square, and the edges are neat; ②When polishing, polish the putty as soon as possible after it is dried, generally within 24 hours. If it is left for too long, the performance of the material will increase, and the difficulty of polishing will reduce the construction efficiency.

(6)Key points of waterborne anti-mold top coating construction

Serial number	Process and material name	Construction technology requirements
1	Coating METOP Ober609 waterborne anti-mold clean top coating or METOP Ober701 waterborne anti-mold matte top coating	**Material modulation method:** ① Confirm the product name, color number, batch number, ratio, supporting technology; ② Mixing the component A and the component B according to the mixing ratio in the instruction: ・METOP Ober 609 waterborne anti-mold clean top coating: a: b (weight ratio) = 5: 1. ・METOP Ober 701 waterborne anti-mold matte top coating: A: B (weight ratio) = 7: 1. ③ The difficulty of trial construction shall be properly diluted with water according to the requirements of the manual, and the dilution ratio shall not exceed 15%. **Painting method:** ① When painting, it is necessary to confirm the product supporting information, and stir it evenly before construction; ② Use medium-long-hair roller or spray gun to cooperate with wool brush for construction, and evenly construct the second pass in the way of corner first and bedding face later; ③ The same wall with the same batch of paint; ④ Construction shall be carried out in sections by dividing lines such as wall frame joints, internal corners or downpipes. First, the paint shall be spread out in the shape of "M" on the wall, and then the paint shall be leveled vertically from top to bottom. When the paint is trimmed, the strength shall be moderate, and it shall be painted from one side to the other, so as to avoid the occurrence of grafting marks and affect the overall decorative effect. ⑤ All parts that need to be painted shall ensure uniform coating and consistent color, and there shall be no missing or less coating. ⑥ According to the construction area, estimate the

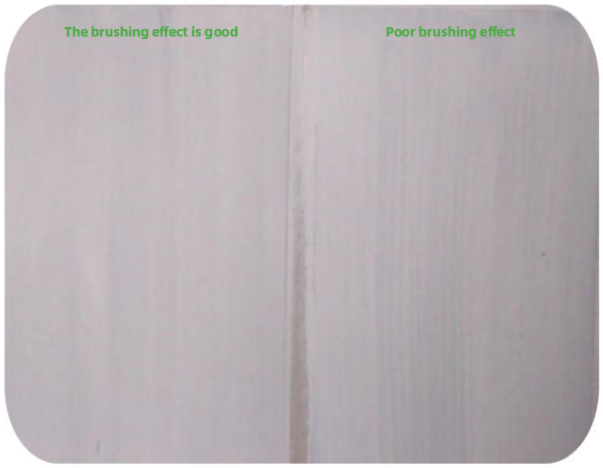
		material consumption in advance, and the mixed coating should be within 40 minutes(25℃) used up. ⑦ Semi-cured materials are forbidden to continue to be used, and may not be mixed with new materials for use.

(7)Paint film maintenance and finished product protection

Serial number	Process and material name	Construction technology requirements
1	Paint film maintenance and finished product protection	① It takes 7 days for the coating film to reach the best performance on the surface of the object at the standard temperature of 25℃. During this period, the pollution and bumping on the surface of the paint film should be reduced as much as possible, so as to avoid the overall effect being affected by the local patched marks; ② Before painting, the finished facilities such as ceramic tiles, doors and windows, glass, rainwater pipes, railings and metal bodies of the building shall be sheltered and protected to prevent the pollution or defects caused by the paint, and ensure that the original objects are the same; ③ If pollution is formed, it will bring considerable difficulty and workload to the follow-up cleaning work. It is suggested to clean up the inadvertently contaminated place in time during construction. Minimize the index of paint pollution.

5.3.3 Common problems and prevention

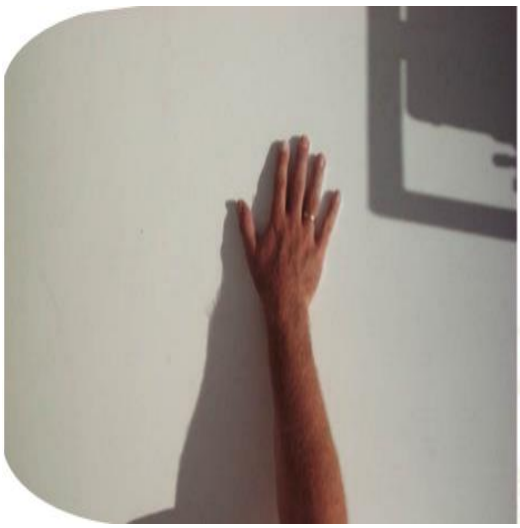
(1)Brush mark



Analysis of brush mark problem			
Factor	Main reason	Precautionary measures	Solution
Substrate	The substrate is too loose, the water absorption is too strong, and it is difficult to brush.	Do sealing treatment at the grass-roots level, choose high-quality water-resistant putty to scrape it flat, and then do alkali-resistant sealing treatment.	1.Smooth the paint film with fine emery cloth. 2.Repainting supporting products according to normal process requirements.
Construct	1.The paint brush is too small, the bristles are too hard or uneven. 2.The brushing skills are not mastered skillfully. 3. The paint is not diluted enough, and the construction viscosity is high.	1.Choose high quality brush construction. 2.When necessary, airless spraying construction shall be adopted. 3.Dilute according to the proportion specified in the product.	
Environment	.1.High temperature	1.Construction in the required	

	and strong wind lead to coating drying too fast.	environment	

(2)Grind into powder




Analysis of pulverization problem			
Factor	Main reason	Precautionary measures	Solution
Substrate	The substrate is very loose, water absorption is too fast, and the wall is too alkaline.	1.Shovel off the loose substrate, coat the water-based sealing interface agent, and then scrape it with high-quality water-resistant putty; 2.If the wall is too alkaline, it should be treated with dilute hydrochloric acid or acetic acid in advance.	1.Grind off all the powder. 2.Re-sealing and alkali-resistant sealing at the grass-roots level 3.Repainting supporting products according to normal process requirements. 4.Appropriately extend the drying and curing time of coatings.
Construct	1.The dilution ratio is too large. 2.Bad atomization during spraying or paint mist after drying. 3.No alkali-resistant sealing primer is	1.Paint mixing according to recommended dilution ratio 2.Pay attention to adjust the amount of paint when spraying. 3.At the same time, pay attention to the use of matching alkali-resistant	

	used.	sealing primer.	
Environment	1. The temperature is too low (below 5℃)	In the required construction environment. worker	
Product	Choose inferior putty	Choose high-quality putty from manufacturers to ensure that the strength of putty layer is consistent with that of grassroots.	

(3)Color difference

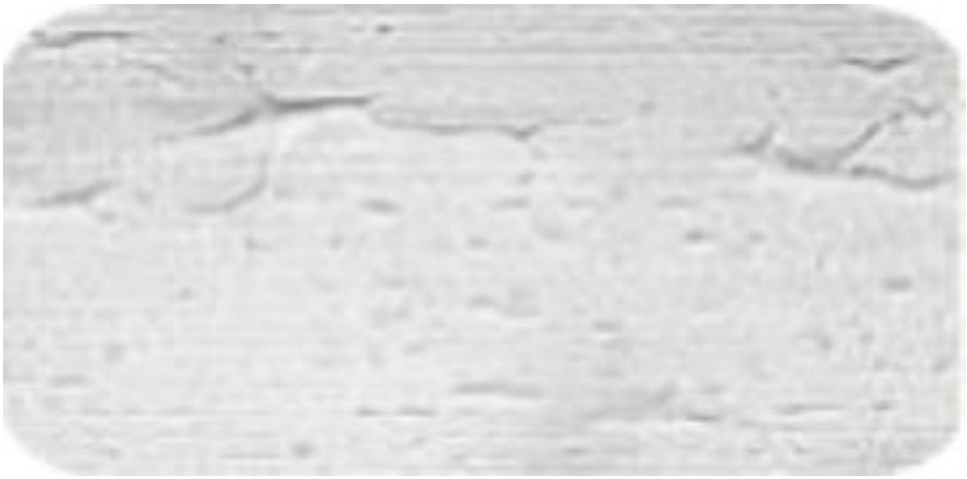
Analysis of chromatic aberration problem			
Factor	Main reason	Precautionary measures	Solution
Product	Large color difference between different batches of products	1.Strictly control the color difference between different batches. 2. Use the same batch of products as much as possible on the same wall or in the same color separation area. 3.Reserve 1 bucket of the same batch of materials for repair.	1.Repaint with 1-2 coats of color paint for complete coverage.
Construct	1.Inconsistency between the color applied with a roller and the color produced by a brush.	1.Paint mixing according to recommended dilution ratio. 2.Pay attention to adjust the amount of paint when	

	2. Different dilution ratios of coatings. 3. The coating thickness of medium and dark paint is different.	spraying. 3. Pay attention to spray evenly, too thick color becomes dark, too thin through the bottom.	

(4)Sag

Analysis of sag problem			
Factor	Main reason	Precautionary measures	Solution
Substrate	The coated surface is not clean, there are oil stains etc.	Clean the surface to be painted.	1.If the paint film is not dry, wipe it off immediately and re-coat it. 2.If the paint film is dry, sand the sagging part with sandpaper and repaint it as a whole.
Construct	1.The dilution ratio is too large. 2.The coating is too thick for one-time construction. 3.Uneven mixing after dilution.	1.Paint mixing according to recommended dilution ratio 2.Construction according to recommended thickness 3.Stir evenly	

(5)Wrinkle



Analysis of wrinkle problem			
Factor	Main reason	Precautionary measures	Solution
Substrate	Brush paint on contaminated surfaces.	Clean the stains on the surface of the substrate.	1. Remove the wrinkled parts and smooth them with an emery cloth. 2. Re-coating of matching products according to normal process requirements.
Construct	1.Different brands of paints are mixed. 2.Overcoating at one time. 3.When the first coating is not completely dry, construct the next coating.	1. Use matching coatings as required. 2. Construction according to recommended thickness. 3. Apply the second coat after the first coat is as dry as possible.	
Environment	High temperature, high humidity and other environments cause the topcoat to wrinkle.	Construction in the required environment.	

(6)Watermark

Analysis of Watermark Problem			
Factor	Main reason	Precautionary measures	Solution
substrate	Not waterproofed.	In balconies, bathrooms, kitchens and areas with water seepage in pipes, it is necessary to do waterproof treatment	1.Cut off the water source, shovel out the watermarked wall, wash it thoroughly with water and let it dry 2.Waterproofing of the substrate. 3. Re-coat as per normal process requirements.
construct	Failure to use matching anti-alkali sealing primer	Use matching alkali-resistant sealing primer	
environment	Water leakage or moisture migration from underground	Find and cut off the water source	

(7)Crack

Analysis of cracking problem			
Factor	Main reason	Precautionary measures	Solution
substrate	1.Too thick putty batch scraping. 2.Inferior putty, poor crack resistance 3.Wall foundation cracking	1.Use qualified putty and avoid over-thickness scraping. 2.Foundation cracking is hard to avoid.	1.For large areas of cracking, it is necessary to remove or sand off all the paint film, and then hang the fiber mesh, with high-quality putty scraping. 2. For localized cracks, use flexible putty to repair the cracks. 3. Re-coating of
construct	The coating film is too thick in one construction.	According to the recommended thickness for construction.	
environment	If the temperature is too low (below 5℃), the paint film will not form well.	Apply in temperatures of 5-35°C. Avoid harsh weather conditions.	

(8)Peel off

Analysis of spalling problem			
Factor	Main reason	Precautionary measures	Solution
product	1.Poor adhesion between paint film and substrate, paint film layers. 2.Use inferior putty 3.Improper selection of coating system	1.Adhesion must be tested and controlled during product design. 2.Choose high-quality waterproof putty 3.Choose the appropriate product package	1.If the flaking is caused by moisture, the water source must be found and waterproofed. 2. Scrape off the peeling paint film completely. 3. Re-apply base sealing and anti-alkali sealing treatment4. Re-scrape with high-quality water-resistant putty. 4. Re-scrape with high-quality water-resistant putty. 5. Painting supporting products according to normal process requirements.
substrate	1.The grass-roots level is very loose 2. Poor base treatment, There is oil and dust. 3. The wall is too wet	1. Shovel off the loose substrate and scrape with qualified putty. 2. Clean the substrate, especially oil and dust 3. Construction after the wall is dried.	
construct	After putty construction, the exposure time is too long and there is pulverization.	Construction under normal process requirements.	

environment	1. Coating at low temperature and high humidity 2. If the temperature is too low, the finish film will be poor.	Construction under normal process requirements.	

6.Construction precautions

6.1 Influence of weather factors

(1) During coating construction, the construction temperature shall be controlled within the range of 5℃-35℃, and the air relative humidity shall be ≤85% to avoid high temperature weather.

(2) 24 hours before painting and 12 hours after painting, it should not be drenched, and it should not be exposed to water before film formation. In case of rain, shelter measures should be taken.

(3) If the construction conditions such as rainy days, high humidity and dry walls fail to meet the technical requirements, the coating will be dried for a long time, which will seriously affect its adhesion, easily lead to problems such as crisp coating, foaming, falling off, sagging and discoloration of the coating, and the coating can not be continued until the wall is completely dried in sunny weather.

(4) Construction should be stopped when the temperature is lower than 5℃, and it is difficult to form a film at low temperature. For example, water below 0℃ will freeze, leading to demulsification.

(5) Materials should be stored in a cool, dry place at 0 ~ 35℃, and should not be placed outdoors in winter, and it is forbidden to be placed outdoors in the sun and rain in summer; The coating remaining in the construction shall be sealed and covered to prevent the coating from deteriorating due to impurities.

6.2 Construction precautions

(1) Try to open all doors and windows before operation and use to ensure adequate ventilation in the construction area.

(2) Before construction, all finished products such as doors and windows, glass,

railings, wooden doors, wooden floors, cabinets, etc. shall be protected and removed after the overall construction is completed to prevent pollution.

(3) Please always wear protective equipment such as rubber gloves, dust mask and goggles when using. If you accidentally get eye contact, please immediately rinse with plenty of water and seek medical assistance.

(4) Please don't let children or pets enter the construction area, and put the product out of reach. If it is accidentally contaminated, please rinse it with plenty of water immediately and seek medical assistance.

(5) When the construction of high-efficiency mildew-proof wall system is divided into sections, the expansion joints, internal corners or downpipes of the wall should be taken as dividing lines, and the same wall should be painted with the same batch number. At the end of construction every day, the painting construction should end at the dividing line, which is convenient for the construction to eliminate the overlapping traces in another day.

(6) When working at high altitude, necessary safety technical facilities, such as scaffolding, hanging baskets, etc., should be firm and safe, meet the requirements of safety operation procedures for aerial work, and be provided with protective facilities such as safety helmets, safety belts and safety ropes. Every day at the construction site, safety inspectors conduct safety inspections on various construction facilities before construction, check the safety protection devices of operators, and check the safety operation in the construction process, so as to find hidden dangers in time, put an end to all kinds of hidden dangers and ensure safe construction.

(7) When the paint is overturned and exposed, cover it with sand or soil, collect it and dispose of it reasonably. Do not pour the paint into the sewer or drain pipe. When disposing of paint waste, it should comply with local environmental protection standards.

7. Acceptance criteria

7.1 dominant item

(1) The variety, model and performance of coatings used in coating engineering should meet the design requirements. Inspection method: check the product certificate, performance test report and entry acceptance record.

(2) The basic treatment of coating engineering should be smooth, solid and firm, without pulverization, peeling and cracks. Inspection method: observation; Touch

inspection; Check the construction records.

(3) The color and pattern of the paint project shall meet the design requirements. Quality, color, pattern and pattern in accordance with the design requirements, uniform and consistent color , no flooding biting color, no flow, pimples, no trachoma, no brush pattern. Inspection method: observation.

(4) Coating engineering should be evenly coated, with uniform surface, firm bonding, uniform pattern and color point size, without obvious rubbing, missing coating, trainspotting, sagging, peeling and powder dropping. Inspection method: observation; Touch check.

7.2 Coating quality acceptance criteria

Serial number	Project	Advanced finishing	Test method
1	Colour	Uniform and consistent	Obesrve
2	Alkali, bite color	Not allow	
3	Falling, pimples	Not allow	
4	Sand holes and brush lines	No sand holes and brush lines.	
5	Leaking and revealing	Not allow	
6	Powder shedding and peeling	Not allow	
7	Whiting	Not allow	
8	Doors and windows	clean	